Primary care data standards: what do we have now? What do we still need?

Michael S. Klinkman, MD, MS
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Department of Family Medicine
A standardized electronic health record, adapted to the specific needs of family physicians and the patients they serve, will constitute the central nervous system of the New Model Practice.

Electronic health record systems must permit the collection, analysis, and reporting of the clinical decisions and their outcomes that primary clinicians make every day.

The system should provide an informatics infrastructure that supports practice-based research, quality improvement, and the generation of new knowledge.

-Future of Family Medicine Project Leadership Committee; Ann Fam Med 2004; 2: S3-S32
The clinical domain of primary care.

- **PEOPLE**
- **PROBLEMS**
  Past / present / future (risks) / treatment
- **CONTEXT**
  Preferences / goals / priorities / life events
- **TIME**
Things we need to know
(a short list)

- **Who has ____________?** [disease registries]
  - *the basis for point-of-care decision support*
  - *enables valid quality assessment, improvement*

- **Who gets ____________?** [the probability of specific diagnoses from common presenting symptoms]
  - *basic clinical epidemiology in primary care*
  - *requires capture of episodes of care*

- **What else is going on with this patient?**
  - *competing demands, social problems, patient priorities*
  - *multimorbidity*

- **What happened Out There?**
Robust simplicity.
“It’s the core clinical office of transactions, of note taking, of record keeping, of data access that still is languishing, and no surprise – they’re the most complicated in terms of technology, culture, and workflow, and I think they’re obviously the next big area.”

David Brailer, MD, PhD
National Coordinator for Health Information Technology
Interview published in BMJ, 16 October 2004
<table>
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<th>STRUCTURE</th>
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Primary care data model:
simple building blocks to create complex reality.
INPUTS

Patients
[templates or interface terminologies]

Clinicians
[natural language, interface terminologies, classifications]

Most difficult!

Automated data feeds
[HL7, XML]

Person:
demographics
social structure
goals, preferences
Problem(s):
current/active
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Clinical Modifiers:
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Actions (“Process”):
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Interventions
Plans
Time:
Episode structure
Data import/export:
Exchange protocols

Aggregate views
Disease registries
HEDIS
Quality assessment
Comorbiditity

Aggregate longitudinal views
Prior probabilities
Posterior probabilities
Episode analysis
Risk factor-to-disease

Cross-sectional patient views
Active problems
“dashboard” summary [CCR]
severity monitoring
prompts, reminders
visit view [template]

Longitudinal patient views
episode history
comorbidity

User-defined views
Third-party payors
Statistical reporting
Patient safety
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| **Aggregate longitudinal views** |
| Prior probabilities |
| Posterior probabilities |
| Episode analysis |
| Risk factor-to-disease |

| **Cross-sectional patient views** |
| Active problems |
| “dashboard” summary [CCR] |
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| episode history |
| comorbidity |

| **User-defined views** |
| Third-party payors |
| Statistical reporting |
| Patient safety |
**Person:**
- demographics
- social structure
- goals, preferences

**Problem(s):**
- current/active
- severity

**Clinical Modifiers:**
- prevention
- risk factors
- Significant events

**Actions (“Process”):**
- Decisions
- Interventions
- Plans

**Time:**
- Episode structure

**Data import/export:**
- Exchange protocols

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**OUTPUTS**

- **Aggregate views**
  - Disease registries
  - HEDIS
  - Comorbidities

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**Patients**
- [templates or interface terminologies]

**Clinicians**
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**Most difficult!**

**Automated data feeds**
- [HL7, XML]
We need local control over inputs and outputs—data entry and data retrieval.
Fitting existing parts together to support primary care HIT.